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EXAMINER

KOEHLER, CHRISTOPHER M

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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3726

DATE MAILED: 02/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/725,958

Applicant(s)

WOODS ET AL.

Examiner

Christopher M. Koehler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14-23, 25-32, 34-38, 40, 41 and 44-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14-23, 25-32, 34-38, 40, 41 and 44-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-3, 5-12, 26, 27, 29-38, 40, 41, 44-46, 48-50, 52 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schultz (US Patent No. 6,665,922).
3. Regarding claim 1, Schultz teaches a swage fastener for use in the aerospace industry and a method for its use comprising, inserting an elongated member (20) through a first hole in a first component and a second hole in a second component with a head of the elongated member positioned proximate the first component (figure 2), passing a collar (46) axially over a helical groove (40) of the elongated member without rotating the collar or the elongated member (clearance fit) prior to swaging the collar wherein the collar has a barrel having a generally constant inner diameter and a generally constant outer diameter (figure 2), swaging the collar to the helical groove of the elongated member by engaging the generally constant outer diameter of the barrel with an installation tool with the first and second components positioned between the head and the collar and with the collar positioned between the second component and a removable portion of the elongated member and removing the removable portion (col. 8, line 40- col. 9, line 15). The collar of Schultz does not however have a projecting flange. Collars of this type are however widely used in the art as can be seen in Fullbright et al (US Patent No. 5,315,755) and many of the other cited references attached. The use of a projecting flange would have been obvious to one of ordinary

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skill in the art at the time of invention because it would provide a more stable platform for the collar when applied.

4. Regarding claim 2, Schultz teaches that removal of the removable portion takes place after swaging the collar.

5. Regarding claim 3, Schultz teaches that the elongated member is sized to be inserted through the first hole and the second hole and therefore the elongated member must be of a smaller diameter than the holes.

6. Regarding claim 5, Schultz teaches that the removable portion is engaged by a first portion of the tool and that the collar is engaged by another portion of the tool and that they are moved axially relative one another (col. 8, line 40- col. 9, line 15).

7. Regarding claim 6, Schultz teaches that these fasteners are typically used in aerospace applications (col. 1, line 14).

8. Regarding claim 7, Schultz teaches that the removable portion is pulled along the axis of the elongated fastener.

9. Regarding claim 8, Schultz teaches that it is well known within the art to insert the elongated member with an interference fit with at least one of the components to hold the components together prior to the actual swaging (col. 1, lines 51-65).

10. Regarding claim 9, Schultz teaches that it is well known within the art to insert the elongated member with a clearance fit (col. 1, line 66-col. 2, line 13).

11. Regarding claim 10, Schultz teaches that the head of the elongated member bearing against the first component (figure 2).

12. Regarding claim 11, Schultz teaches swaging the collar to bear against the second component (figure 2).

13. Regarding claim 12, Schultz teaches that swaging the collar includes applying an axial force and a radially inward force to the collar without applying torque (col. 8, line 40- col. 9, line 15).

14. Regarding claim 26, Schultz teaches a swage fastener for use in the aerospace industry and a method for its use comprising, inserting an elongated member (20) through a first hole in a first component and a second hole in a second component with a head of the elongated member positioned proximate the first component (figure 2), passing a collar (46) axially over a helical groove (40) of the elongated member without rotating the collar or the elongated member (clearance fit) prior to swaging the collar wherein the collar has a barrel having a generally constant inner diameter and a generally constant outer diameter (figure 2), swaging the collar to the helical groove of the elongated member by engaging the generally constant outer diameter of the barrel with an installation tool with the first and second components positioned between the head and the collar and with the collar positioned between the second component and a removable portion of the elongated member and removing the removable portion (col. 8, line 40- col. 9, line 15). The collar of Schultz does not however have a projecting flange. Collars of this type are however widely used in the art as can be seen in Fullbright et al (US Patent No. 5,315,755) and many of the other cited references attached. The use of a projecting flange would have been obvious to one of ordinary

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skill in the art at the time of invention because it would provide a more stable platform for the collar when applied.

15. Regarding claim 27, Schultz teaches that removal of the removable portion takes place after swaging the collar.

16. Regarding claim 29, Schultz teaches that the removable portion is engaged by a first portion of the tool and that the collar is engaged by another portion of the tool and that they are moved axially relative one another (col. 8, line 40- col. 9, line 15) an example of such a tool can also be seen in Stencel (US Patent No. 3,792,933).

17. Regarding claim 30, Schultz teaches that the removable portion is pulled along the axis of the elongated fastener.

18. Regarding claim 31, Schultz teaches that it is well known within the art to insert the elongated member with a clearance fit (col. 1, line 66-col. 2, line 13).

19. Regarding claim 32, Schultz teaches that swaging the collar includes applying an axial force and a radially inward force to the collar without applying torque (col. 8, line 40- col. 9, line 15).

20. Regarding claim 34, Schultz teaches a swage fastener for use in the aerospace industry and a method for its use comprising, a collar having a barrel having a generally constant inner diameter and a generally constant outer diameter (figure 2), an elongated member (20) having a head portion and a shaft portion, the shaft portion being configured to be received in the aperture of the collar and including a helical thread sized to slip through the aperture of the collar without rotating the collar of the member, the member further having a removable portion between the threaded portion and the

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tool engagement portion being configured to break under a predetermined axial tension and swaging the collar to the helical thread (figure 2). The collar of Schultz does not however have a projecting flange. Collars of this type are however widely used in the art as can be seen in Fullbright et al (US Patent No. 5,315,755) and many of the other cited references attached. The use of a projecting flange would have been obvious to one of ordinary skill in the art at the time of invention because it would provide a more stable platform for the collar when applied.

21. Regarding claim 35, Schultz also teaches that there is a tool an example of such a tool can also be seen in Stencil.

22. Regarding claim 36, Schultz teaches that the tool engages the tool engagement portion and pulls the fastener distally in tension and that while this occurs another portion of the tool moving axially relative thereto swages the collar to the thread (col. 8, line 40- col. 9, line 15).

23. Regarding claims 37 and 38, Schultz teaches that the elongated member is generally circular in cross-section and that the tool engagement portion is comprised of axially located circumferential ridges (figure 2).

24. Regarding claim 40, Schultz teaches a swage fastener for use in the aerospace industry and a method for its use comprising, a collar having a barrel having a generally constant inner diameter and a generally constant outer diameter (figure 2), an elongated member (20) having a head portion and a shaft portion, the shaft portion being configured to be received in the aperture of the collar and including a helical thread sized to slip through the aperture of the collar without rotating the collar of the member,

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the member further having a removable portion between the threaded portion and the tool engagement portion being configured to break under a predetermined axial tension and swaging the collar to the helical thread (figure 2), an installation tool, an example of such a tool can also be seen in Stencel, having a first portion engaging the ridges of the removable portion and a second portion to engage the collar and that the two portions of the tool are movable axially relative each other (col. 8, line 40- col. 9, line 15). The collar of Schultz does not however have a projecting flange. Collars of this type are however widely used in the art as can be seen in Fullbright et al (US Patent No. 5,315,755) and many of the other cited references attached. The use of a projecting flange would have been obvious to one of ordinary skill in the art at the time of invention because it would provide a more stable platform for the collar when applied.

25. Regarding claim 41, the examiner takes official notice that tools of this type are very well known in the art and that since Schultz does not go into the specific parts of the tool but rather that a common tool is used it would have been obvious to one of ordinary skill in the art to choose one of the plethora of swaging tools available for attaching members with frangible portions. Many examples of such tools can be found in the cited references attached, an example of such a tool can be seen in Stencel.

26. Regarding claim 44, Schultz teaches a swage fastener for use in the aerospace industry and a method for its use comprising, a first component having a first aperture and a second component having a second aperture, an elongated member having a head portion positioned proximate the first component, the member having a shaft portion extending through the apertures having a helical thread and a frangible portion

to be broken under axial force, a collar having an aperture into which the elongated member is received further having a barrel having a generally constant inner diameter and a generally constant outer diameter, passing a collar axially over a helical groove of the elongated member without rotating the collar or the elongated member (clearance fit) and swaging the collar to the helical groove of the elongated member by engaging the generally constant outer diameter of the barrel with an installation tool, an example of such a tool can also be seen in Stencil, with the first and second components positioned between the head and the collar and with the collar positioned between the second component and a removable portion of the elongated member and removing the removable portion (col. 8, line 40- col. 9, line 15), and that the removal is done under a predetermined axial load. The collar of Schultz does not however have a projecting flange. Collars of this type are however widely used in the art as can be seen in Fullbright et al (US Patent No. 5,315,755) and many of the other cited references attached. The use of a projecting flange would have been obvious to one of ordinary skill in the art at the time of invention because it would provide a more stable platform for the collar when applied.

27. Regarding claims 45 and 46, Schultz teaches that fasteners of this type are for use in the aerospace industry and it would therefore be obvious to use such fasteners to attach aircraft components.

28. Regarding claim 48, Schultz teaches a swage fastener for use in the aerospace industry and a method for its use comprising, inserting an elongated member (20) through a first hole in a first component and a second hole in a second component with

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a head of the elongated member positioned proximate the first component (figure 2), passing a collar (46) axially over a helical groove (40) of the elongated member without rotating the collar or the elongated member (clearance fit) prior to swaging the collar wherein the collar has a barrel having a generally constant inner diameter and a generally constant outer diameter (figure 2), swaging the collar to the helical groove of the elongated member by engaging the generally constant outer diameter of the barrel with an installation tool with the first and second components positioned between the head and the collar and with the collar positioned between the second component and a removable portion of the elongated member and removing the removable portion (col. 8, line 40- col. 9, line 15), and that the removal is done under a predetermined axial load. The collar of Schultz does not however have a projecting flange. Collars of this type are however widely used in the art as can be seen in Fullbright et al (US Patent No. 5,315,755) and many of the other cited references attached. The use of a projecting flange would have been obvious to one of ordinary skill in the art at the time of invention because it would provide a more stable platform for the collar when applied.

29. Regarding claim 49, Schultz teaches that removal of the removable portion takes place after swaging the collar.

30. Regarding claim 50, Schultz teaches that the elongated member is sized to be inserted through the first hole and the second hole and therefore the elongated member must be of a smaller diameter than the holes.

31. Regarding claim 52, Schultz teaches that fasteners of this type are for use in the aerospace industry and it would therefore be obvious to use such fasteners to attach aircraft components.

32. Regarding claim 53, Schultz teaches that the removable portion is pulled along the axis of the elongated fastener.

33. Claims 4, 14-23, 25, 28, 47 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schultz in view of Reynolds (US Patent No. 3,464,472).

34. Regarding claims 4, 28, 47 and 51, Schultz teaches all of the structure except for the application of a liquid to the elongated member before swaging the collar thereto without removing the liquid before swaging. Reynolds teaches a swage type fastener of similar structure to be inserted through openings such that the exterior threaded portion becomes coated with a layer of sealant which is usually the consistency of paste and then swaging a collar without removing the sealant (col. 2, line 61-col.3, line 10 and col. 3, lines 49-52). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the sealant use method of Reynolds to the swage fastener system of Schultz in order to apply a sealant to the fastener to provide a tighter seal of the joints.

35. Regarding claims 14-16, Schultz teaches a swage fastener for use in the aerospace industry and a method for its use comprising, inserting an elongated member (20) through a first hole in a first component and a second hole in a second component with a head of the elongated member positioned proximate the first component (figure 2), the elongated member is sized to be inserted through the first hole and the second

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hole and therefore the elongated member must be of a smaller diameter than the holes, passing a collar (46) axially over a helical groove (40) of the elongated member without rotating the collar or the elongated member (clearance fit) prior to swaging the collar wherein the collar has a barrel having a generally constant inner diameter and a generally constant outer diameter (figure 2), swaging the collar to the helical groove of the elongated member by engaging the generally constant outer diameter of the barrel with an installation tool, an example of such a tool can also be seen in Stencil, with the first and second components positioned between the head and the collar and with the collar positioned between the second component and a removable portion of the elongated member and removing the removable portion (col. 8, line 40- col. 9, line 15). The collar of Schultz does not however have a projecting flange. Collars of this type are however widely used in the art as can be seen in Fullbright et al (US Patent No. 5,315,755) and many of the other cited references attached. The use of a projecting flange would have been obvious to one of ordinary skill in the art at the time of invention because it would provide a more stable platform for the collar when applied. Schultz does not teach the application of a liquid to the elongated member before swaging the collar thereto without removing the liquid before swaging. Reynolds teaches a swage type fastener of similar structure to be inserted through openings such that the exterior threaded portion becomes coated with a layer of sealant which is usually the consistency of paste and then swaging a collar without removing the sealant (col. 2, line 61-col.3, line 10 and col. 3, lines 49-52). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the sealant use method of Reynolds

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to the swage fastener system of Schultz in order to apply a sealant to the fastener to provide a tighter seal of the joints.

36. Regarding claim 17, Schultz teaches that the tool engages the tool engagement portion and pulls the fastener distally in tension and that while this occurs another portion of the tool moving axially relative thereto swages the collar to the thread (col. 8, line 40- col. 9, line 15).

37. Regarding claim 18, Schultz teaches that fasteners of this type are for use in the aerospace industry and it would therefore be obvious to use such fasteners to attach aircraft components.

38. Regarding claim 19, Schultz teaches that the removable portion is pulled along the axis of the elongated fastener.

39. Regarding claim 20, Schultz teaches that swaging the collar includes applying an axial force and a radially inward force to the collar without applying torque (col. 8, line 40- col. 9, line 15).

40. Regarding claim 21 and 23, Schultz teaches a swage fastener for use in the aerospace industry and a method for its use comprising, inserting an elongated member (20) through a first hole in a first component and a second hole in a second component with a head of the elongated member positioned proximate the first component (figure 2), the elongated member is sized to be inserted through the first hole and the second hole and therefore the elongated member must be of a smaller diameter than the holes, passing a collar (46) axially over a helical groove (40) of the elongated member without rotating the collar or the elongated member (clearance fit) prior to swaging the collar

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wherein the collar has a barrel having a generally constant inner diameter and a generally constant outer diameter (figure 2), swaging the collar to the helical groove of the elongated member by engaging the generally constant outer diameter of the barrel with an installation tool, an example of such a tool can also be seen in Stencel, with the first and second components positioned between the head and the collar and with the collar positioned between the second component and a removable portion of the elongated member and removing the removable portion through axial tension (col. 8, line 40- col. 9, line 15). The collar of Schultz does not however have a projecting flange. Collars of this type are however widely used in the art as can be seen in Fullbright et al (US Patent No. 5,315,755) and many of the other cited references attached. The use of a projecting flange would have been obvious to one of ordinary skill in the art at the time of invention because it would provide a more stable platform for the collar when applied. Schultz does not teach the application of a liquid to the elongated member before swaging the collar thereto without removing the liquid before swaging. Reynolds teaches a swage type fastener of similar structure to be inserted through openings such that the exterior threaded portion becomes coated with a layer of sealant which is usually the consistency of paste and then swaging a collar without removing the sealant (col. 2, line 61-col.3, line 10 and col. 3, lines 49-52). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the sealant use method of Reynolds to the swage fastener system of Schultz in order to apply a sealant to the fastener to provide a tighter seal of the joints.

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41. Regarding claim 22, Schultz teaches that the tool engages the tool engagement portion and pulls the fastener distally in tension and that while this occurs another portion of the tool moving axially relative thereto swages the collar to the thread (col. 8, line 40- col. 9, line 15).

42. Regarding claim 25, Schultz teaches that swaging the collar includes applying an axial force and a radially inward force to the collar without applying torque (col. 8, line 40- col. 9, line 15).

Response to Arguments

43. Applicant's arguments with respect to claims 1-12, 14-23, 25-32, 34-38, 40, 41 and 44-53 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

44. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

45. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

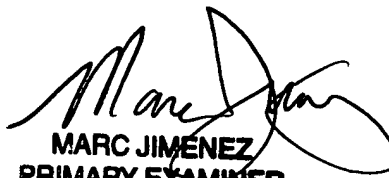
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Koehler whose telephone number is (571) 272-3560. The examiner can normally be reached on Mon.-Fri. 7:30A-4:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Jimenez can be reached on (571) 272-4530. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher M. Koehler
February 15, 2006

CMK


MARC JIMENEZ
PRIMARY EXAMINER
2-16-06